

Notice of Allowability

Application No.

10/781,755

Examiner

David D. Le

Applicant(s)

SAKAMOTO ET AL.

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 19 September 2005.
2. ☒ The allowed claim(s) is/are 13-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This is the second Office action on the merits of Application No. 10/781,755, filed on 20 February 2004. Claims 13-24 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:
 - Information Disclosure Statement, received on 02/20/04
 - Foreign Priority Document, received on 02/20/04

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicants' attorney, Mark H. Neblett, on 30 November 2005.

The application has been amended as follows:

Claim 15:

- Line 4, the period "." after "input shaft" has been replaced with a comma --,--;
- Line 16, the period "." after "path" has been replaced with a comma --,--.

Claim 16:

- Line 5, the period “.” after “control means” has been replaced with a comma--,--;
- Line 5, the period “.” after “predetermined value” has been replaced with a comma --,--.

Claim 17:

- Line 4, the period “.” after “output shaft” has been replaced with a comma --,--;
- Line 9, the period “.” after “engaged” has been replaced with a comma --,--;
- Line 15, the period “.” after “engaged” has been replaced with a comma --,--;
- Line 16, the period “.” after “said second connection” has been replaced with a comma --,--.

Claim 18:

- Lines 3-6, “at least one of temperature of said frictional surface of said synchronizer, or heat quantity of said synchronizer, or abrasion loss of said synchronizer and said drive power source torque control means. when said parameter is larger than a predetermined value. switches to” has been amended as --at least one of temperature of said frictional surface of said synchronizer, heat quantity of said synchronizer and abrasion loss of said synchronizer, and said shift mode switching means, when said parameter is larger than a predetermined value, switched to --.

Claim 19:

- Line 24, “a parameter” has been changed to --said parameter--.

Claim 21:

- Line 4, the period “.” after “output shaft” has been replaced with a comma --,--;
- Line 9, the period “.” after “engaged” has been replaced with a comma --,--;
- Line 12, “comprising the step of:” has been amended as --further comprising the steps of:--.

Claim 22:

- Line 12, “said second connection. Comprising the step of:” has been amended as -
-said second connection, further comprising the steps of:--.

Claim 23:

- Line 7, the period “.” after “synchronizers” has been replaced with a comma --,--;
- Lines 16-17, “comprising the step of:” has been amended as --further comprising the steps of:--.

Claim 24:

- Line 9, the period “.” after “connection” has been replaced with a comma --,--;
- Line 18, “comprising the step of:” has been amended as --further comprising the steps of:--.

Allowable Subject Matter

4. Claims 13-24 are allowed.
5. The following is an examiner's statement of reasons for allowance:

Claim 13:

The prior art of record fails to show or render obvious car control unit for carrying out shifting of an automatic transmission comprising a shifting instruction, a state discrimination means and a synchronizer selecting means, as recited in the claim; specifically, wherein the shifting instruction includes a first torque transmission path from the input shaft to the output shaft, formed by a first connection between the gears and the synchronizers, is switchable to a second torque transmission path from the input shaft to the output shaft, formed by a second connection via at least one intermediate torque transmission path, formed by a third connection using one of the synchronizers having a smaller reduction ratio than that in the first connection, in a state that the clutch is engaged.

Claim 15:

The prior art of record fails to show or render obvious car control unit for carrying out shifting of an automatic transmission comprising a shifting instruction, a state discrimination means and a drive power source torque control means, as recited in the claim; specifically, wherein the shifting instruction includes forming a first torque transmission path from the input shaft to the output shaft by a first connection of the

gears and the synchronizing mechanisms, when the first torque transmission path is switched to a second torque transmission path from the input shaft to the output shaft formed by a second connection, transferring a torque from the input shaft to the output shaft by employing at least one synchronizer, in a state that the friction clutch is engaged, after forming at least one intermediate torque transmission path by a third connection employing the one synchronizer, transferring the torque of the drive power source from the input shaft to the output shaft first via the at least one intermediate torque transmission path and then via the second torque transmission path.

Claim 17:

The prior art of record fails to show or render obvious car control unit for carrying out shifting of an automatic transmission comprising a first shift mode, a second shift mode, a state discrimination means and a shift mode switching means, as recited in the claim; specifically, wherein the first shift mode includes, when switching the connection of the gears and the synchronizers from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer path formed by one of the synchronizers and then switching to a transfer path formed by the second connection.

Claim 19:

The prior art of record fails to show or render obvious car control unit for carrying out shifting of an automatic transmission comprising a first shift mode, a second shift

mode, a state discrimination means, a drive power source torque control means and a shift mode switching means, as recited in the claim; specifically, wherein the first shift mode includes, when switching the connection of the gears and the synchronizers from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer path formed by one of the synchronizers and then switching to a transfer path formed by the second connection.

Claim 21:

The prior art of record fails to show or render obvious car control method for an automatic transmission having a plurality of gears, a plurality of synchronizers, a drive power source, a clutch, an input shaft and an output shaft, as recited in the claim; specifically wherein the car control method includes the steps of:

- When switching the connection of gears and synchronizer from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer path formed by at least one of the synchronizers and then switching to a transfer path formed by the second connection; and
- Selecting a synchronizer for forming the intermediate transfer path according to a parameter indicating the detecting state of a frictional surface of the synchronizer.

Claim 22:

The prior art of record fails to show or render obvious car control method for an automatic transmission having a plurality of gears, a plurality of synchronizers, a drive power source, a clutch, an input shaft and an output shaft, as recited in the claim; specifically wherein the car control method includes the steps of:

- When switching the connection of gears and synchronizer from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer path formed by at least one of the synchronizers and then switching to a transfer path formed by the second connection; and
- Reducing the torque of the drive power source according to a parameter indicating the detected state of a frictional surface of the synchronizer.

Claim 23:

The prior art of record fails to show or render obvious car control method for an automatic transmission having a plurality of gears, a plurality of synchronizers, a drive power source, a clutch, an input shaft and an output shaft, as recited in the claim; specifically wherein the car control method includes a first mode having the step of:

- When switching the connection of gears and synchronizers from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer

path formed by at least one of the synchronizers and then switching to a transfer path formed by the second connection.

Claim 24:

The prior art of record fails to show or render obvious car control method for an automatic transmission having a plurality of gears, a plurality of synchronizers, a drive power source, a clutch, an input shaft and an output shaft, as recited in the claim; specifically wherein the car control method includes a first shift mode and a second shift mode, the first shift mode having the steps of:

- When switching the connection of gears and synchronizers from a first connection to a second connection, in a state that the friction clutch is engaged, switching a transfer path formed by the first connection to at least one intermediate transfer path formed by at least one of the synchronizers and then switching to a transfer path formed by the second connection; and
- Reducing the torque of the drive power source according to a parameter indicating the detected state of a frictional surface of the synchronizer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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